JUN 2 1 2001

1646

TECH CENTER 1600 2900

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/776,705

DATE: 05/29/2001 TIME: 13:42:53

Input Set : A:\Seglist.txt

Output Set: C:\CRF3\05292001\I776705.raw

```
4 <110> APPLICANT: GUEGLER, Karl et al
 6 4120 - TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
         NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS,
         AND USES THEREOF
 3
                                                                  ENTERED
10 0130 · FILE REFERENCE: CLOSSION
12 H140 + CUERENT APPLICATION NUMBER: 09/776,705
13 H141 - CUERENI FILING DATE: 2001-02-06
15 8160 - NUMBER OF SEQ ID NOS: 5
17 \cdot (170 \cdot \texttt{SOFTWARE}) PastSEQ for Windows Version 4.0
19 - 210 - 3E0 ID NO: 1
20 H211 - LENGTH: 1822
Ul 4012 - TYPE: DNA
32 -313 - ORGANISM: Human
24 + 400 / SEQUENCE: 1
25 coattocasa daagtoagga aagootgoad aggabtigat aaataattaa gaabagagtij60
16 ttotgaacat paacacaaag tggaagaaco ttaagotgaa ggtacagtat attatttaca 1.0
17 otgaaggggo ttgtgtgtgg acaagaaago gotgacagot caaatggato coatggaact 150
28 yagaaatgto aabatogaab bagatgatga gagbagbagt ggagaaagtg btobagatag 240
.9 otacutoagg acaggaaatt cagaaaaggo agcaatgago agtcaatttg ctaatgaaga 300
30 cactgaaagt cagaaattoo tgacaaatgg atttttgggg aaaaagaago tggcagatta 360
31 tgotgatgaa daddatooog gaadeadtto dtttggaatg tottcattta acotgagtaa 420
32 tgodatdatg ggdagtigga tootgiggott gtodtatgod atggddtada daggggtdat 480
33 actititata ascatgoigo tigoigigo aatastatoa oligiaticag tibaccitti 540
34 attaaaaaca gocaaggaag gagggtottt gatttatgaa aaattaggag aaaaggcatt 600
35 tggatggoog ggaaaaattg gagottttgt ttodattaba atgbagaada ttggagbaat 660
36 gtoaagotac etetttatea ttaaatatga actacetgaa gtaateagag catteatggg 720
37 acttgaagaa aatactggag aatggtacct caatggcaac tacctcatca tatttgtgtc 780
38 tgttggaatt attetteeae tttegeteet taaaaattta ggttatettg getataceag 840
39 tygattttot ottacotyca tyytyttttt tyttaytyty ytyatttaca agaaattoca 900
40 aatacootgo cototabotg tittggatba bagtgttgga aatotgtbat tbaabaabab 900
41 gottocaatg catgtggtaa tgttacccaa caactetgag agttetgatg tgaactteat 1020
42 gatggattac acceacegea atcetycagg getggatgag aaccaggeca agggetetet 1000
43 teatgacagt ggagtagaat atgaagetea tagtgatgae aagtgtgaae eeaaataett 1140
44 tytattoaac toboggaegy cotatycaat tootatoota ytattiyott ttytatyoca 1.00
45 deotgaggte ettebeatet acagtgaaet taaagategg tebeggagaa aaatgeaaae 1200
46 ggtgtoaaat atttocatca oggggatgot tgtoatgtac otgettgoog occtotttgg 1320
47 ttacctaacc ttctatggag aagttgaaga tgaattactt catgcctaca gcaaagtgta 1300
48 tacattagae atcostotte teatggtteg eetggsagte stigtggeag taasacaaac 1440
49 tytydddait ytodiotiod daattoytab atbaytyatb abadtyttat tiboddaady 1500
50 accetteage tygataegae attteetgat tyeagetyty ettattycae ttaataatyt 1960
51 totgytoato ottytyosaa otataaaata satottoyya tisatagyyy ottottotyo 1620
52 saotatgotg attititatio tipoagoagi tititatott aaacitgica agaaagaaac 1880
53 tittaggica occeasaagi tegggjetti aattiteett gigjitggaa tattetteat 1740
54 yattagaago atqqobactca ttataattga otggatttat gatootocaa attocaagoa 1500
55 toactaacac aaygaaaaat ac
57 -210 - SEQ ID NO: 2
```

58 <211 / LENGTH: 547

DATE: 05/29/2001 PATENT APPLICATION: US/09/776,705 TIME: 13:42:53

Imput Set : A:\Seqlist.txt

Output Set: C:\CRF3\05292001\I776705.raw

59 < 212> TYPE: PR.T. 69 </130 ORGANISM: Human 52 <400 SEQUENCE: 3 63 Met Asp Pro Met Glu Leu Arg Ash Val Ash Ile Glu Pro Asp Asp Glu 10 35 Ser Ser Ser Gly Glu Ser Ala Pro Asp Ser Tyr Ile Arg Ile Gly Asn Ger Glu Lys Al: Ala Met Ser Sor G.n She Ala Asn Glu Asp Thr Glu 69 Ser Gln Lys Phe Lea Thr Ash Gly Phe Lea Gly Lys Lys Lea Ala 70 50 55 71 Asp Tyr Ala Asp Glu His His Pro Gly Thr Thr Ser The Gly Met Jor 73 Ser Phe Asr. Lea Ser Asr Ala Ilo Not Gly Ser Gly Ile Lea Gly Lea 35 40 75 Ser Tyr Ala Met Ala Tyr Thr Gly Val Ile Leu She Ile Ile Met Leu 1.0005 77 Leu Ala Val Ala Ilo Leu Ser Leu Tyr Ser Val His Leu Leu Leu Lys 1.10 115 79 Thr Ala Lys Gl. Gry Gly Ser Leu H.e Tyr Glu Lys Leu Gly Glu Lys 135 145 81 Ala Phe Gly Trp Pro Gly Lys IIe Gry Ala Phe Val Ser IIe Thr Mot 1,500 155 83 Gln Ash Ile Gly Ala Met Ser Ser Tyr Leu Phe Ile ile Lys Tyr Glu 170 1.6585 Leu Pro Giu Val Ile Arg Ala Phe Met Gly Leu Glu Glu Asn Thr Gly 180 $1 \sim 5$ 87 Glu Trp Tyr Leu Ash Gly Ash Tyr beu Ile Ile She Val Ser Val Gly 195 200 205 89 Ile Ile Leu Pro Leu Ser Leu Leu Lys Ash Leu Gly Tyr Leu Gly Tyr 215 220 91 Thr Ser Gly Phe Ser Leu Thr Cys Met Val Phe Phe Val Ser Val Val 230 93 Ile Tyr Lys Lys Pho Glr. Ile Pro Cys Pro Leu Pro Val Leu Asp His 245 95 Ser Val Gly Ash Leu Ser Phe Ash Ash Thr Leu Pro Not His Val Val 2.65 261: 97 Met Leu Pro Ash Ash Ser Glu Ser Sor Asp Val Ash Phe Met Met Asp 275 28.0 99 Tyr Thr His Ard Ast. Pro Ala Gly Lou Asp Glu Ast. Gin Ala Lys Giy 230 295 101 Ser Leu His Asp Ser Gly Val Glu Tyr Glu Ala His Ser Asp Asp bys 310 315 103 Cys Glu Fro Lys Tyr Phe Val Phe Asn Ser Arg Thr Ala Tyr Ala Ile 325 330 105 Pro Ile Leu Val Pile Ala Phe Val Cys His Pro Glu Val Leu Pro Ile 340 545 107 Tyr Ser Glu Leu Lys Asp Arg \mathbb{A}_{27} Arg Arg Lys Met Gln Thr Val Ser 198 555 .00

PATENT APPLICATION: US/09/776,705

DATE: 05/23/2001 TIME: 13:42:53

Input Set : A:\Seqlist.txt

Output Set: C:\CRF3\05292001\I776705.raw

109 110		11e 37)	Ser	lle	Thr	Gly	Met 375	มะเม	Vāl	Met	Tyr	Leu 330	Leu	Ala	Ala	Lei	
111			Tyr	Lest.	Thr	Phe		Gly	Glu	Val	Glu 395	Азр	Glu	:Jeu	Lea	His 400	
		$T\Sigma\tau$	Ser	Lys	Val 4.35		Tr.r	ile i	Asp	lie 410		Leu	Le ı	Met.	Val 415		
		Al.	Vāl	1 4.:1		Ala	/ìí	The	Gln 425		Val	$F^{\ast}r \circ$	IіЭ	7al 430		Phe	
	Pro	110	Arg 435	Phir	Ser	Val	fle	Th:		Leu	Phe	Pro	Lys 445		Pro	Phe	
	:ll-e.r	Trp		Arg	His	Phe	Le 1 455		Alā	Alā	Vā L	Leu 460		Ala	Leu	Asn	
1.:1			Leu	V.al	Ile	Leu 470		Pro	Thr	Ile	Lys 475		I 1.9	Phe	Gly	Prie 4÷0	
		$\operatorname{Gl}\gamma$	Ala	Sign	Ser 435		Thr	M∙∍t	L∙eu	Ile 490		Ile	Leu	Pro	Ala 495		
	Phe	Тут	Leu	ឯបូ <i>ន</i> ១០០		Val	<u>1</u> ;;3	743	Glu 5)5		2he	Ārģ	3er	Pro 510		Lys	
	Val	Gl;	Ala 515	มีเช่น	Ile	Phe	Leu	Val 520		Gly	Ile.	Phe	Phe 523		Lle	Gly	
		Met. 530		Lera	Ile	Пl÷	[,le 535		Trp	Il⊕	Tyr	A.sp 540		Pro	Asn	Ser	
131	Lys 545		His														
		o.⇒ SE	EQ II	D 110 :	: 3												
				H: 33													
137	-212	2 · TY	YF'E:	DHA													
138	-:213	3→ ()E	RGAN.	ISM:	Hruma	ın											
				NCE:													
																gtaaac	
																igtgtc	
																igaatt	
																ctgaaa	
																aataga	
																gaattc	
																ccagaa	
				-	_	-			-							ttage	
																gotgag atttgo	
																accact	
																ggtttt	700
																atgaaa	780
																gtagga	
155	oraac	rina.ak	יים ביוני הביוני	a a i t.a :	a a .v.a .a	aa aa	airt at	a ana s Tarata	a ato	rt a st	tat	tttt	tato	aaa 1	maac:	cagtet	9:10
156	aaaa	atcac	ata :	aa sow	aaato	ca as	·	adt tit	aat	gaat	tat	tidad	gatict	ogo Caior →	aataa	gotaac	960
																gagact	
																ttttt	
																etttte	
																gttest	

DATE: 05/29/2001 PATENT APPLICATION: US/09/776,705 TIME: 13:42:53

Input Set : A:\Seqlist.txt

Output Set: C:\CRF3\05292001\I776705.raw

						tttattttt	
	-	-	**	*	_	aattototat	
						coattostat	
164	taacttctta	tttgtatttt	tottttttta	atctcttcat	gctataattt	gagigatits	1440
1 :::	cacagaticty	totttsaatt	ttataagtot	tasttalgat	gagtttttt	<u>aaattīdaat</u>	1
1	gattotattt	tettettet	tttaagaatt	postitsstg	actottttg	paabagbotig	1 * 1 1
1.67	ttataattt	atauteutt	ataatgtttt	tattet jiga	aagttättit	ottattttga	10000
165	atgttttctt	tpaaaatgto	tttcttttta	ttaatttaat	gtaaaagtoo	stittaaatt	1690
1,	gatttqttat	ttatagtes	ttagatgtga	accttaccat	ttottatass	tactogcast	1 140
	Sttgotagtg				atttgaggat		1 = 0.0
1:1	otosagtqtq	agetgaatet	Jaaaaaaqta	stychatyyc	actqqqttqt	agayutatta	$1 \sim 600$
1 72	coatgtggta	gittatatati	дісадалдаа	tagcacattt	tgtgasttst	ggagdaattt	1.00
1/3	ttatgttagt	Étatétiata	aaqatttqqt	tatoaaatgg	gtattgcasa	fgtbatgabb	1.000
						attgaatgaa	
						tosadgostt	
						aatyaqqtee	
						gaqqataaaa	
	-	-				gtaatgotga	
	-					daggatodaa	
						atcaagcatt	
						ttotagttat	
						acaatttact	
						ttoottqaaq	
						adotgodatt	
		-				dtaatttdst	
				-	-	ggatttgett	
						acaaaatgta	
			ttcatttaaa				1880
						gotgaaggta	
			aggggettgt				:000
			aatgtcaaca				3060
			atogggatag				31.0
			qttocatqqa	-			18C
			tqqatttatt	-			3240
			tqqtaatqaa				7.700
			caatgtottt		-		4,5 K O
			tottatottt				3420
			atttatata				3480
		, ,,,	ccaaatatat	_		•	-940
	_	-	totqaatqto	-		-	- 340 - 4600
	-	_				-	
			aaagttaaac				4660 3700
						caacggtcag	3340
			ottattaatg				1040 (900
			ggootacatt				3960 3960
			geteteetet				4020
			aatcaattto				
			tagattacac				1650
U.B	cotgitating	acctgddddt	edegloatgt	ccccigosot	SICOSCIALIE	gttäcttgtt	4 1 4 7)

DATE: 05/29/20/1 PATENT APPLICATION: US/09/776,705 TIME: 13:42:53

Input Set : A:\Seqlist.txt

Output Set: C:\CRF3\05292001\I776705.raw

 $\mathbb{C}10$ goottoasto attotyotoo aastgootog aatoaqtoad etgotoocss titletboyty 4200 $\odot 11$ tigacaeste teatesitea agaatsaget Gaacateagg telectatge ageetitiee 4260 ${f \#12}$ adattactor actoroccat gragalagiga organoccae froatytace of stoccatus ${f \#3.00}$ ± 1.3 geagatgita attaegosas tastaeaggi täätggeste tytygytessä esävetyssä 4.740 $\mathbb{C}11$ cattytotgy typataytya ytyparaata yttatttyat aaytbaatty atttcppaaaa1.15 adabyttata toaaastyta oatyatttaa yatyotoaya agygaattti tyaboaaate $4\pi/6$ $\sqrt{10}$ taggogtgas atagagasta ttytyotdas s x_1 sagaott otgatottat ttadasacado 47.00 ± 17 daggaaaato batbaggaga aabtabbgtt bttbottbaa qtagbtbagt gbaatgaabt 40.00. The tragggargit oggastagag aggssaciga gargitaaatt atagsattii siaaaattagg 4080 $_{
m CIP}$ tyabobtiga agaaabacta yggtyotaga agaragyyet tiggaytoty bayaytayti $_{
m CP}$. In goodgaptit agagaaghty titigipotot tityagottoa atggaaaatg taaaaatggba $4\pi m_0^2$ ± 31 aaddaadago tyottttaaa gyatgagaty gytyaddaga atatagatya datttaatad 4 ± 60 LUD titititatia eticicotic actycatias setpagiaaa tigaticaaa ecigagyaty 4 ± 0.0 ...(3) tittotgaaag goatgoadad aaatatgago totgoogagg titgadagagt taaaggggad 4.000 224 accetectaa gaactyteat aytyteatto casttyated toaaaaayeea yaytagaaay 5040 ILIS agoatgaatg ottitottaa gottoatgoa atgtyttoog aaccactac agtyacttac 5100 .220 ottitatoto otggottaaa pasaggadat battttgdag tiitttaaaat bagsttaaag 5100 .27 agatgggttt tatotatgtg tggtttggat tgaabbbtta aatgtaaatt tittgagaaat 5220 ule beaacataat gtatttattt gtgateatta tacttgtgtt ticaatacat getgggttig \$2%0 ULP gtateaaaas atttaabata otggggaeat ttetbatota tittatabaaa totitggeatg 5040 ± 30 thaaatgast acaastsate toatgecaaa ahaagaabat gcaaatgest caaagaaaga 5400231 aaatotytti aestiesaaat teleaatett aaaaaestast atggaataca gattitagit 5400 INSI tategattaa aataaagatt obagagetta aatebtagge ggbabeeetg teettatage 5520 .33 deteaggeds attitiagget toattitiate styteatete agtitiocaae tytigaacatt 5580154 atqtaccaqt ottoabataq baqqtacatt aattabaqab battaatqta aaccacaaaa 5640 .35 gagtggtggg bagtgggtgg ggggtgaatg gaaatggaaa gaggbaabaa btgagggbat 5700 236 tgtgotttot gtgagaaata tggggagaag gotaggaaat gttottaact tgtgtactca 5760 237 gagetattta typettyagt tetagaaaag cacatacaac titigtggtit ogigtgitgi 5820 238 trotatorae atoroaract grittorati ordaaaaagt aaccorgrea toerotitice 5880 139 totocagatt attitoagga tiagottoig tiataaaaaa tagottijtao agatotoota 5940 240 caataattat tooctattot atooctaagg obtatotato tatootatga gacagacaga 6000 .41 gtttdactot tytygoddat gotygaytyd aatyytydaa totogydtoa otydaadoto 6000 242 tgootoocag gttbaagega ttotootgot toagootoot gagtagetgg gattacaggo 61.0 243 goodgecade ababtogget aactottogt attootagta gagacgaago otboocatgo 6180 ± 44 tygodaggot gytottydad tootgadott aagttatoca eesadotday eetoddaaay 6240./45 tgotgggatt abaggogtga gobabtgtgb btggbbtbta ggattatatt aatagaabaa 6300 .46 tottoaatta tiitaioitti piitatotti piittatotti aittipatyi aggaaatyio otaaaattii 6360 U47 daaadootka attigaaago astittaaaa toatadabag togagoatti tatataaaaa 6420 $\mathbb{Z}48$ baabtaabaa gootgogaba tottqbagta taabaastgos atggbagbag baggbottat 6480140 taattgagee bestygaaat giggetgyte stagyteeyt ageeteaaay gebeigyett 68400.00 gtaactgoag gagotgacca gcacagotot ataaccaagt tgtacatott otagoctgtg 0.000.:91 tocaagaaaa ocagaatoac aacgototgt ggatagtgab atottaaagt tittetttooc 6660 USD toocaactor torgocager carrigaarry officaaraat thoortager toatroatha 6720 ...63 totqttaata atocatqtac attttqaqaq taattaaaad adatacqdac adabagaaad 6780 254 aaccaacaca ababacagot abbactgaat tabittibbag taagagatgt atgtataaat 6240.HAS gattgtacca aaaaaaaaa aagaaagaaa ütäscagsta sagggcostg sstgggastg 6.000 ..56 ottgatgeba gggggagaat ggggtotebb ootgggtatg ggtgggtatg ggbotgbtgb 6.60 .:57 ttoacettte tgagedacay ttoectatay ggatattttg aacateagat gagataagga 70.00 258 toacagtgsc taggcattta ataaatatto gttgaattaa taaaatsats tgattatggt 7080

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/776,705 TIME: 13:42:54

DATE: 05/29/2001

Input Set : A:\Seqlist.txt

Output Set: C:\CRF3\05292001\I776705.raw